

## Amendments to the Claims

This listing of claims will replace all prior versions and listings, of claims in the application:

### Listing of Claims:

#### We Claim:

1 (currently amended): ~~A cattle feed additive characterized by the combination of fibrolytic enzymes~~ A method for enhancing the production of microbial protein in the rumens of cattle characterized by addition of a feed additive to cattle feed, the additive made by combining fibrolytic enzymes having enzyme activity and one or more species of lactobacillus bacteria having colony forming units wherein the ratio of enzyme activity to colony forming units has a value, of at least about 1 unit of digestive enzyme activity to every  $10^5$  colony forming units, based upon the ingredients prior to combination, the combination not being ensiled after being combined, and feeding the additive combined with the cattle feed to the cattle.

2 (currently amended): ~~The cattle feed additive~~ method of claim 1 further characterized by the ratio of enzyme activity to colony forming units having a value of at least 2 units of enzyme activity to every  $10^6$  colony forming units.

3 (currently amended): ~~The cattle feed additive~~ method of claim 1 further characterized by the lactobacillus bacteria being selected from the group comprising *Lactobacillus Acidophilus*, *Lactobacillus Plantarum*, and *Lactobacillus Brevis*, and mixtures thereof.

4 (currently amended): ~~The cattle feed additive~~ method of claim 1 further characterized by the fibrolytic enzymes being selected from the group comprising cellulases, xylanase, hemi-cellulase and mixtures thereof.

5 (currently amended): A method of making and using cattle feed characterized by replacing previously used bypass protein in the cattle feed with an additive, the additive containing a sufficient amount of a mixture of one or more specie of lactobacillus bacteria and one or more types of fibrolytic enzymes, to produce, when fed to cattle, at least enough microbial protein in each head of cattle to be at least equivalent to one half pound (.23kg) of animal protein fed to each of the cattle per day, the additive not being ensiled after the bacteria and enzymes are added and feeding the cattle feed containing the additive to a head

of cattle to form at least a sufficient amount of microbial protein in the rumen of the head of cattle to be at least equivalent to one half pound (.23kg) of animal protein fed to the head of cattle per day, assuming that each of the cattle are mature and of an average weight for cattle.

6 (original): The method of claim 5 further characterized by the lactobacillus bacteria being selected from the group consisting of *Lactobacillus Acidophilus*, *Lactobacillus Plantarum*, and *Lactobacillus Brevis*, and mixtures thereof, and the protein byproducts replaced are selected from the group consisting of nerve, brain, blood, bone and meat containing byproducts.

7 (original): The method of claim 5 further characterized by the lactobacillus bacteria being a mixture of *Lactobacillus Acidophilus*, *Lactobacillus Plantarum*, and *Lactobacillus Brevis*.

8 (currently amended): The method of claim 5 further ~~characterize~~ characterized by the one or more digesting enzymes being selected from the group consisting of xylanase, and cellulases derived from *Trichoderma viride*, *Aspergillus oryzae*, *Aspergillus niger*, and *Bacillus subtilis*.

9 (original): The method of claim 5 further characterized by the one or more digesting enzymes being a mixture of xylanase, and cellulases derived from *Trichoderma viride*, *Aspergillus oryzae*, *Aspergillus Niger*, and *Bacillus subtilis*.

10 (currently amended): A method of ~~converting~~ enhancing the conversion of cattle feed to microbial protein in the rumen of a head of cattle characterized by incorporating an additive containing a sufficient amount of a mixture of one or more species of lactobacillus bacteria and one or more types of digesting enzymes into the cattle feed to form at least a sufficient amount of microbial protein in the rumen of the head of cattle to be at least equivalent to one ~~fourth~~ half pound ( ~~.11 kg~~ .23kg) of animal protein fed to each ~~the head of~~ the cattle per day and feeding the cattle feed containing the additive to a head of cattle to form at least a sufficient amount of microbial protein in the rumen of the head of cattle to be at least equivalent to one half pound (.23kg) of animal protein fed to the head of cattle per day.

11 (currently amended): The method of claim 10 further characterized by the lactobacillus bacteria being selected from the group consisting of *Lactobacillus Acidophilus*, *Lactobacillus Plantarum*, and *Lactobacillus Brevis*, and mixtures thereof and the amount of microbial protein formed to be at least equivalent to one ~~fourth~~ half pound (~~.11~~ .23 kg) of animal protein fed to each of the cattle per day.

12 (original): The method of claim 10 further characterized by the lactobacillus bacteria being a mixture of *Lactobacillus Acidophilus*, *Lactobacillus Plantarum*, and *Lactobacillus Brevis*.

13 (currently amended): The method of claim 10 further characterized by the one or more digesting enzymes being selected from the group consisting of xylanase, hemi-cellulase and cellulases derived from *Trichoderma viride*, *Aspergillus oryzae*, *Aspergillus niger*, and *Bacillus subtilis*.

14 (currently amended) The method of claim 10 further characterized by the one or more digesting enzymes being a mixture comprised of xylanase, and cellulases derived from *Trichoderma viride*, *Aspergillus oryzae*, *Aspergillus Niger*, and *Bacillus subtilis*.

15 (currently amended): ~~Cattle feed characterized by the daily ration of feed fed to each head of cattle~~ A method for enhancing the production of microbial protein in the rumen of a head of cattle characterized by combining a sufficient amount of one or more strains of lactobacillus bacteria and one or more types of digesting enzymes having an enzyme activity of at least  $10^4$  digestive units per oz (28.35 g) based upon the ingredients prior to combination into an additive, introducing the additive without ensiling into cattle feed, feeding the feed containing the additive without ensiling to the head of cattle, a daily ration of feed fed to each head of cattle containing a sufficient amount of one or more strains of lactobacillus bacteria and one or more types of digesting enzymes having an enzyme activity of at least  $10^4$  digestive units per oz (28.35 g) to enhance the conversion of the cattle feed and the bacteria in the rumen to microbial protein.

16 (currently amended): The ~~cattle feed~~ method of claim 15 further characterized by the enzymes being present at a level sufficient to produce an enzyme activity of from  $10^4$  to  $10^8$  units per gram of cattle feed and the lactobacillus bacteria being present at a level sufficient to increase the yield of microbial protein in the rumen.

17 (original): The method of claim 15 further characterized by microbial protein being produced in the cattle by interaction of the bacteria and enzymes, the bacteria being added at a level of from  $10^6$  to  $10^{10}$  colony forming units per gram of cattle feed and enzymes being added at a level sufficient to produce a digestive enzyme activity of from  $10^6$  to  $10^7$  units per gram of cattle feed based upon the amount being added.

18 (currently amended): A method of reducing runoff of water soluble nitrogen compounds from cattle manure characterized by incorporating a sufficient amount of a mixture of one or more species of lactobacillus bacteria and one or more types of digesting enzymes into an additive and combining the additive with cattle feed, and feeding the combination to cattle to form at least a sufficient amount of microbial protein to be at least equivalent to one fourth pound (.11 kg) of animal protein fed to each of the cattle per day, the combination not being ensiled after incorporation of a sufficient amount of the mixture.

19 (currently amended): ~~Cattle feed~~ A method of improving the amino acid balance in the rumen characterized by ~~the feed containing~~ combining a sufficient amount of a ~~mixture~~ one or more strains of lactobacillus bacteria and one or more types of cellulose and/or hemi-cellulose digesting enzymes in an additive, adding the additive to cattle feed without ensiling, feeding the cattle feed containing the additive to cattle to convert the cellulose and/or hemi-cellulose and nitrogen in the cattle feed to microbial protein in the rumen of cattle, the microbial protein having an improved amino acid balance over the amino acid balance of the microbial protein normally occurring in the rumen, the cattle feed being free of a surfactant on a carrier, and not being ensiled after the combination of the bacteria and enzymes.

20 (new): A method for enhancing the production of microbial protein in the rumen characterized by combining a feed additive containing a combination of fibrolytic enzymes having enzyme activity and one or more species of bacteria having colony forming units wherein the ratio of enzyme activity to colony forming units has a value, prior to combination of at least about 1 unit of digestive enzyme activity to every  $10^5$  colony forming units, adding the additive to animal feed, and feeding the animal feed containing the additive to a ruminant, the additive not being ensiled after the combining the enzymes and the bacteria.

21 (new): The method of Claim 20 further characterized by the feed additive containing a cellulose and/or a hemi-cellulose digesting enzyme, and the additive not being ensiled prior to being feed to a ruminant.

22 (new): A method of making and using cattle feed characterized by replacing previously used bypass protein in the cattle feed with an additive, the additive containing a sufficient amount of one or more types of fibrolytic enzymes, to produce, when fed to cattle, at least enough microbial protein in each head of cattle to be at least equivalent to one half pound (.23kg) of animal protein fed to each of the cattle per day, assuming that each of the cattle are mature and of an average weight for cattle and feeding the cattle feed containing the additive to cattle to produce at least enough microbial protein in each head of cattle to be at

least equivalent to one half pound (.23kg) of animal protein per day and the additive not being ensiled prior to being feed to a ruminant.